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Nawaz, T

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Intellectual capital profiles and financial performance of Islamic banks in the UK

Tasawar Nawaz

Plymouth Business School
University of Plymouth
Plymouth
PL4 8AA
United Kingdom

Abstract

The main contribution of this paper is to report on the impact of intellectual capital (IC) on financial performance of Islamic banks operating in the United Kingdom (UK). Two distinct measures, return on average assets (ROAA) and return on average equity (ROAE) are used to measure the financial performance. The paper also controls for number of employees and bank size. Results based on the regression analysis suggest that IC efficiency proxied by the value added intellectual coefficient (VAIC) relates positively with financial performance of Islamic banks in the UK. The analysis further suggests that bank size and number of employees equally contribute in banks' achieving higher financial performance. Additionally, the paper further ghettoises sub-components of IC namely; capital employed, human capital and structural capital to analyse the discrete impact of these IC constituents on financial performance. The analysis of the sub components suggests a positive relationship between physical and financial capital employed efficiency, human capital efficiency and performance.

Keywords: Islamic banking and finance, intellectual capital efficiency, value added intellectual coefficient, financial performance, Islamic banks, United Kingdom.

1. Modern Islamic banking in the United Kingdom

The roots of modern Islamic banking and finance in the United Kingdom (UK) can be traced back to the early 1980s when a Middle-eastern banking group, Al Barakah started its banking operations in the UK. However, the bank was forced to close in the early 1990s due to inflexibility by the UK financial regulatory authority. However, Islamic banking and finance strikes again in the beginning of the new millennium. This time it was a success. The UK Financial Services Authority, currently working as the Financial Conduct Authority (FCA) issued the first licence to Islamic Bank of Britain, currently operation under the name of Al Rayan Bank plc, in 2004 to operate as a fully-*Shariah* compliant retail Islamic bank in the UK. The bank is said to be the first Islamic bank to open its door in the West (see Nawaz, 2015).

Currently, there are seven Islamic financial institutions working in the UK. However, six banks namely; Al Rayan Bank, Bank of London and The Middle East, BLME Holdings, Gatehouse Bank, Qatar Islamic Bank (UK), and Rasmala plc, are actively engaged in retail and investment banking activities. There are several other conventional banks such Lloyds bank and HSBC bank offering interest free accounts and Islamic banking services, respectively. Additionally, there are several *Shariah*-compliant fund management and private equity investments companies operating within the sector. Moreover, several non-UK domiciled Islamic banks have opened their branches in the UK to cater the needs of their clients.

The rapid increase in number of financial institutions offering *Shariah*-compliant products and services in the UK hints the increased attention to Islamic way of banking in the UK and in the West in general. Islamic banking has reported sustained growth in the past two decades (Ernst & Young, 2016; Nawaz, 2017a). It is therefore imperative to analyse the determinants of stable growth in Islamic banking and Islamic banks operating in the non-Muslim majority countries such as the UK. There is a lack of research on this topic. This study fills this research gap.

2. Value added intellectual coefficient

The concept of value added here refers to the total value created by using the available physical, non-physical and financial resources. In other words, value creation in the context of current study refers to the profitability measured by average return on assets (ROAA) and average return on equity (ROAE). To simplify it further, the paper attempts to test the relationship between tangible assets such as buildings machines, offices, desks, computers, copyrights and so forth as well intangible assets such as human capital i.e. knowledge skills and abilities of the employees in providing good customer services and financial performance. It is expected that the ability to achieve higher financial performance i.e. ROAA and ROAE be subject to the best utility of available resources including financial resources. All firms' resources are subsumed under intellectual capital, which is measured by the value added intellectual coefficient (VAIC). The proxy is consistent with the earlier research in the banking sectors around the world (see El-Bannany, 2008; Nawaz, 2018b), who reported a significant positive relationship between VAIC and bank performance. Accordingly, it is anticipated that;

Hypothesis 1: intellectual capital efficiency measured by VAIC relates positively with financial performance based on ROAA of Islamic banks operating in the UK

Hypothesis 2: intellectual capital efficiency measured by VAIC relates positively with financial performance based on ROAE of Islamic banks operating in the UK

2.1 Capital employed efficiency

Banks deal with money. They create money with money. Therefore, physical and financial capital, here referred to as the efficiency of capital employed is highly significant for banking business (Berger and Bouwman, 2013; Nawaz, 2013a). Islamic banks operate as interest free hence, profit is mainly generated through various investment projects rather than mainly

relying on the interest income as it the case in conventional banking system. Therefore, it is important measure the impact of capital-employed efficiency on financial performance.

Hypothesis 3: capital employed efficiency relates positively with financial performance based on ROAA of Islamic banks operating in the UK

Hypothesis 4: capital employed efficiency relates positively with financial performance based on ROAE of Islamic banks operating in the UK

2.2 Human capital efficiency

Personal traits i.e. knowledge skills, abilities, capability to lead and innovate to satisfy the needs of customers and shareholders are all sorts of human capital. Usually, human capital resides within a person and that person willingly rents these talents to an organisation. The organisation then exploits these personal profiles to create value for the stakeholders (Nawaz, 2017d; Nawaz, 2017f; Nawaz, 2016b; Nawaz and Goj, 2013). Human capital is at the centre of intellectual capital (Stewart and Ruckdeschel, 1998). Like any other firm, human capital is important in the financial services sectors. Even more because it is human touch that encourages and convinces someone to put their money with a bank. Banks offer excellent customer services in person as well as through various sources to keep their clients banking with them. The client base of Islamic banks is somewhat different as they bank according to their religious believes. Therefore, human capital efficiency is delivery efficient services and satisfying the client needs is of paramount importance in Islamic banking and finance industry. Given the context of the present study, the human capital might be rare yet competent (Nawaz, 2017e; Nawaz, 2017f) given the significance of London as the financial hub for financial activities. Therefore, human capital efficiency is expected to have significant positive relationship with financial performance based on ROAA and ROAE.

Hypothesis 5: human capital efficiency relates positively with financial performance based on ROAA of Islamic banks operating in the UK

Hypothesis 6: human capital efficiency relates positively with financial performance based on ROAE of Islamic banks operating in the UK

2.3 Structural capital efficiency

Structural capital is a combination of hard and soft firm resources such as tangible buildings, offices, desks, computers and software, databases and patents protected by the copyrights (Nawaz, 2018a; Nawaz, 2017a; Nawaz, 2017c; Nawaz and Goj, 2013). Organisations rent the human capital resources but they own the structural resources and they are reflected as asserts in their books (Nawaz, 2013b). These resources are essential to do business. On one hand, the help the employees to work better hence, enhancing their efficiency. On the other hand, they improve their own efficiency by being utilised in an efficient manner. These efficiencies are expected to relate with financial performance. Accordingly, the impact of structural capital efficiency is analysed;

Hypothesis 7: structural capital efficiency relates with financial performance based on ROAA of Islamic banks operating in the UK

Hypothesis 8: structural capital efficiency relates with financial performance based on ROAE of Islamic banks operating in the UK

3. The UK financial services sector

As stated above, the main objective of this research is to examine the impact of IC efficiency measured by value added intellectual coefficient (VAIC) and efficiency of sub-components of

IC namely; capital employed efficiency, human capital efficiency and structural capital efficiency on financial performance based on return on average assets (ROAA) and return on average equity (ROAE) of Islamic banks operating in the UK financial services sector for the five years, 2013 to 2017 while controlling for bank size and number of employees.

Before focusing on the Islamic banks operating in the UK, it is essential to put the UK financial services sector at glance. The Orbis BankFocus Database suggests that over five hundred financial institutions are operating in the UK. These institutions are divided into fifteen different categories. These categories include

- Commercial Banks,
- Bank Holdings & Holding Companies,
- Clearing & Custody Institutions,
- Cooperative Banks,
- Finance Companies,
- Group Finance Companies,
- Investment Banks,
- Investment & Trust Corporations,
- Islamic Banks,
- Other Non-banking Credit Institutions,
- Private Banking/Asset Management Companies,
- Real Estate & Mortgage Banks,
- Saving Banks,
- Securities Firms, and
- Specialized Government Credit Institutions.

The above category clearly highlights the scope, depth, and diversity of financial services provided by the financial institutions in the UK. It is interesting to note that Islamic banks make

only a fraction of the UK financial services sector however, the objective of this paper is not to measure the comparative impact of Islamic banks in the UK financial services sector. Instead, the research focuses on Islamic banks alone to measure the impact of IC on financial performance in the context of Islamic banks operating in the UK.

3.1 Research sample

The database showed seven Islamic banks operating in the UK. However, the data was available for six Islamic bank hence; they are include in the research accordingly. Table 1 illustrates the research sample used in the present study.

Table 1
Research sample profiles

<i>Bank name</i>	<i>Listing</i>	<i>ET</i>	<i>NE</i>	<i>WRA</i>	<i>CRA</i>	<i>WRE</i>	<i>CRE</i>
Al Rayan Bank	Unlisted	CS	215	3572	109	4004	126
BLME plc	Unlisted	CS	123	4308	123	2832	100
BLME Holdings	Listed	GUO	117	4307	124	2831	101
Gatehouse Bank	Unlisted	CS	53	8243	184	3903	125
Qatar Islamic Bank (UK)	Unlisted	CS	36	6293	156	6546	176
Rasmala	Listed	GUO	74	12633	229	4680	138

Notes: Listing =Listing position, ET =entity type, CS =controlled subsidiary, GUO = global ultimate owner, NE = No of employees, WRA =world-rank by assets, CRA =county-rank by assets, WRE =world-rank by equity, CRE =country-rank by equity, BLME =bank of London and the Middle East.

As grasped in Table 1, out of six two banks namely BLME Holdings and Rashala plc are listed while other four banks are unlisted. Similarly, the forgoing banks are global ultimate owner and the remaining four are controlled subsidiaries. In terms of total numbers of employees, Al Rayan Bank has the largest human capital base with 215 employees, followed by Bank of London and The Middle East and BLME Holdings with 123 and 117, respectively. The remaining three banks have less than one hundred employees. Rasmala plc, Gatehouse Bank and Qatar Islamic Bank (UK) have 74, 53 and 36 employees respectively. Turing to the rank by assets, it is noted that Rasmala plc is ranked lower in both world and country whereas Al

Rayan Bank is ranked as the highest Islamic bank in the UK. In terms of rank on equity, Qatar Islamic Bank (UK) has lowest world rank by equity whereas Bank of London and The Middle East is ranked as highest Islamic bank by equity at country level.

3.2 Dependent variables

Two separate return of average assets (ROAA) and return on average equity (ROAE) are used to measure the dependent variable, the financial performance of Islamic banks operating in the UK. The use of these financial measures is consistent with the earlier research in the same filed (please see, Ahmad and Ahmed, 2016; Tahir et al., 2018; Nawaz, 2018a; Nawaz, 2017a). Data related to ROAA and ROAE and other financial data is derived from BankFocus database.

3.3 Independent variables

Intellectual capital efficiency is the main independent variable in this paper. Consistent with the previous research, IC efficiency is measured by using the value added intellectual coefficient (VAIC) methodology. The VAIC methodology was developed by Pulic (2000). The methodology is frequently used to measure the impact of IC in the financial and non-financial sector (among others, see, Hasan et al., 2017; Nawaz, 2017b; Nawaz, 2017c; Nawaz, 2016a).

VAIC is a combination of three variables namely capital employed efficiency, human capital efficiency and structural capital efficiency (Nawaz, 2018b). Value added is calculated by subtracting total expenses (excluding personal expenses) from total income. Capital employed is the sum of total physical and financial capital. Human capital is the sum of total personal expenses. Structural capital is difference between value added and human capital. The efficiency of each IC sub-component is calculated first. Capital employed efficiency is the ratio of physical and financial capital to value added. Human capital efficiency is the ratio of total

personal expenses to value added. Structural capital is the ration of value added to structural capital. All three efficiencies are summed to calculate the VAIC.

4. Research analysis

The following section provides the statistics related to the dependent and independent variables used in this research study.

Table 2
Descriptive statistics and correlation matrix

<i>Variables</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Med.</i>	<i>Max.</i>
<i>Panel B: descript statistics</i>						
LnROAA	30	0.755	0.905	2.659	0.635	7.588
LnROAE	30	0.804	1.030	-0.916	1.052	2.250
VAIC	30	0.645	0.200	0.334	0.740	0.875
CEE	30	4.002	1.086	5.792	3.845	2.402
HCE	30	0.138	1.115	4.705	0.083	1.418
SCE	30	-1.031	1.287	-2.940	-0.745	0.881
BankSize	30	0.075	0.006	0.067	0.077	0.083
N _{Employees}	30	92.533	47.406	27	86.5	215

<i>Panel B: correlation matrix</i>								
<i>Variables</i>	<i>LnROAA</i>	<i>LnROAE</i>	<i>VAIC</i>	<i>CEE</i>	<i>HCE</i>	<i>SCE</i>	<i>BankSize</i>	<i>N_{Employees}</i>
LnROAA	1							
LnROAE	0.708	1						
VAIC	0.663	0.901	1					
CEE	0.733	0.991	0.927	1				
HCE	0.743	0.569	0.776	0.856	1			
SCE	0.797	0.939	0.872	0.961	0.978	1		
BankSize	0.466	-0.078	-0.204	-0.222	-0.286	-0.126	1	
N _{Employees}	0.254	0.127	0.155	0.164	0.1553	0.089	0.663	1

Notes: LnROAA =log of return on average assets, LnROAE =log of return on average equity, VAIC =value added intellectual coefficient, CEE =capital employed efficiency, HCE =human capital efficiency, SCE =structural capital efficiency, Bank_{Size} =bank size i.e. log of total assets, N_{Employees} =total number of employees.

The profiles are explained in Table 2 below, which provides the descriptive as well as the correlation analysis. Tale 2, panel A shows that the mean value of ROAA and ROAE is 0.76 and 0.80, respectively. The positive value. Similarly, VAIC has a mean value of 0.65. The sub-

components of IC, capital employed efficiency and human capital efficiency have positive mean values of 4 and 0.14, respectively whereas the mean value for structural capital efficiency is negative 1.03. The average employee size is 92.5. Panel B of Table 2 represents the correlation matrix for all the research variables. The 1% level of significant statistical results are highlighted in bold colour. No multicollinearity can be found.

4.1 Impact of intellectual capital (IC) on financial performance of Islamic banks

Eight separate research models are used to analyse the impact of intellectual and it's subcomponents on financial performance of Islamic banks operating in the UK. These models are illustrated below.

$$LnROAA = \alpha + \beta_1 VAIC + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 1$$

$$LnROAA = \alpha + \beta_1 CEE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 2$$

$$LnROAA = \alpha + \beta_1 HCE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 3$$

$$LnROAA = \alpha + \beta_1 SCE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 4$$

$$LnROAE = \alpha + \beta_1 VAIC + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 5$$

$$LnROAE = \alpha + \beta_1 CEE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 6$$

$$LnROAE = \alpha + \beta_1 HCE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 7$$

$$LnROAE = \alpha + \beta_1 SCE + \beta_2 Bank_{Size} + \beta_3 N_{Employees} + \varepsilon \quad Eq. 8$$

Where;

LnROAA = Log of return on average assets,

LnROAE = Log of return on average equity,

VAIC = Value added intellectual coefficient

CEE = Capital employed efficiency

HCE = Human capital efficiency

SCE = Structural capital efficiency

Bank_{Size} = Bank size i.e. log of total assets

N_{Employees} = Total number of employees

α = constant

ε = the error term.

Equation 1 to 4 are used measure the impact of IC and its sub-components on return on average assets (ROAA). Equation 5 to 8 are used to measure the impact of IC and its sub-components on return on average equity (ROAE). Results for each financial measure, ROAA and ROAE are provided in Table 3 and Table 4 below.

4.1.1 Impact of intellectual capital (IC) on ROAA

Four research models are used to analyse the impact of IC on return on average assets (ROAA). Results are provided in Table 3 below.

Table 3
Econometric analysis for return on average assets (ROAA)

		Eq. 1	Eq. 2	Eq. 3	Eq. 4
<i>Variables</i>	<i>Predicted Sign</i>	<i>ROAA</i>	<i>ROAA</i>	<i>ROAA</i>	<i>ROAA</i>
<i>Composite intellectual capital efficiency</i>					
VAIC	+	3.387***			
Bank _{Size}	+	102.2***	58.84*	62.67**	86.38*
N _{Employees}	+/-	0.00432**	-0.00514	-0.00218	0.000904
<i>Constituents of intellectual capital efficiency</i>					
CEE	+		26.35***		
HCE	+			1.847***	
SCE	+				-0.0150
Constant		11.09***	5.425**	6.067**	-7.052*
Observations		30	30	30	30
Adj. R^2		0.686	0.585	0.724	0.194

Notes: *** p<0.01, ** p<0.05, * p<0.1.

The impact of IC and its constituents on return on average assets (ROAA) is provided in Table 3. As can be seen IC efficiency measured by the value added intellectual coefficient (VAIC) relates positively with ROAA, results are provided in column three of Table 3. The results support hypothesis (H₁). These results are consistent with the earlier findings of Hasan et al.

(2017) and Nawaz (2016), who measured the impact of IC on performance of Islamic and conventional banks in Bangladesh and several other countries around worldwide, respectively. The results are consistent with Tahir et al. (2018), who analysed the financial services firms in Pakistan. Similarly, bank size and number of employees relate positively with ROAA at 1% and 5% level of significance, respectively. This suggests that Islamic banks larger in size with larger work force be likely to offer higher ROAA.

The impact of constituents of intellectual capital (IC) on ROAA is analysed separately using equation 2, 3 and 4. Equation 2 measures the impact of capital-employed efficiency (CEE) on ROAA. Results are supplied in column four of Table 3, which suggests a significant positive relationship at 1% level of statistical significance. This supports hypothesis (H₃). These results are consistent with Nawaz (2016) who analysed the Islamic banking and finance industry.

Similarly, equation 3 measures the impact of human capital efficiency (HCE) on ROAA. Results are supplied in column five of Table 3, which suggests a significant positive relationship at 1% level of statistical significance between HCE and ROAA. This supports hypothesis (H₅). These results are consistent with Ahmad and Ahmed (2016), who reported a significant positive relationship between human capital efficiency and financial performance of Islamic banks in Pakistan.

Finally, equation 4 measures the impact of structural capital efficiency (SCE) on ROAA. Results are supplied in column six of Table 3, which suggests no statistically significant relationship between SCE and ROAA. This does not support hypothesis (H₇).

4.1.2 Impact of intellectual capital (IC) on ROAE

As above, four research models are used to analyse the impact of IC on return on average equity (ROAE). Results are provided in Table 4 below.

Table 4***Econometric analysis for return on average equity (ROAE)***

		Eq. 5	Eq. 6	Eq. 7	Eq. 8
<i>Variables</i>	<i>Predicted Sign</i>	<i>ROAE</i>	<i>ROAE</i>	<i>ROAE</i>	<i>ROAE</i>
<i>Composite intellectual capital efficiency</i>					
VAIC	+	4.641***			
BankSize	+	32.70	9.994	14.17	17.30
N _{Employees}	+/-	0.00507*	0.00158	0.00341	0.00302
<i>Constituents of intellectual capital efficiency</i>					
CEE	+		14.65		
HCE	+			0.900	
SCE	+				-0.0145
Constant		5.229**	0.172	0.636	-0.456
Observations		30	30	30	30
Adj. R^2		0.824	0.427	0.387	0.208

Notes: *** p<0.01, ** p<0.05, * p<0.1.

The impact of IC and its constituents on return on average equity (ROAE) is provided in Table 4. As can be seen IC efficiency measured by the value added intellectual coefficient (VAIC) relates positively with ROAE, results are provided in column three of Table 4. The results support hypothesis (H₂) that IC efficiency relates positively with financial performance in Islamic banking, measured by ROAE. These results are consistent with the earlier findings of El-Bannany (2008), who reported a significant positive relationship between IC efficiency and performance of banks operation in the UK. Unlike ROAA, only number of employees relate positively with ROAA at 10% level of significance, suggesting that Islamic banks with larger work force are likely to offer higher return on average equity (ROAA) in the UK.

As before, the impact of constituents of intellectual capital (IC) on ROAE is analysed separately using equation 6, 7 and 8. Equation 6 measures the impact of capital-employed efficiency (CEE) on ROAE. Results are supplied in column four of Table 4, which suggests no

statistically significant relationship between CEE and ROAE. Likewise, equation 7 measures the impact of human capital efficiency (HCE) on ROAE. Results are supplied in column five of Table 4, which suggests no statistically significant relationship between HCE and ROAE. Lastly, equation 8 measures the impact of structural capital efficiency (SCE) on ROAE. Results are supplied in column six of Table 4, which suggests no statistically significant relationship between SCE and ROAE. Hence, hypotheses (H_4), (H_6), and (H_8) are not supported.

5. Summary and conclusion

The main objective of this paper was to empirically investigate the impact of intellectual capital (IC) efficiency on financial performance of Islamic banks operating in the UK. Two distinct measures, return on average assets (ROAA) and return on average equity (ROAE) were used to measure financial performance from 2013 to 2017. The paper also controlled for bank size and number of employees. Results based on the regression analysis suggest that IC efficiency proxied by the value added intellectual coefficient (VAIC) relates positively with financial performance of the selected Islamic banks in the UK. The analysis further suggests that bank size and number of employees equally contribute in banks' achieving higher financial performance. Additionally, the paper further ghettoises sub-components of IC namely; capital employed, human capital and structural capital to analyse the discrete impact of these resources on financial performance. The analysis of the sub components suggests a positive relationship between capital employed efficiency, human capital efficiency and performance.

The separate analysis further suggest that capital employed efficiency and human capital efficiency drive ROAA. The ROAA is equally driven by the bank size in all models. Similarly, number of employees drive ROAA in the main model only, which measures the impact of VAIC on financial performance. The results for ROAE are statistically less strong.

VAIC relates with ROAE however, the separate analysis does not show any statistical significance between the sub-components of IC and ROAE. Similarly, the contribution of bank size and number of employees is also shallow.

This is the first study to measure the IC efficiency of Islamic banks in the UK. The study hopes to encourage future researchers to expand the insights observed in this study further by performing a comparative analysis between Islamic and conventional banks operating in the West, UK or elsewhere.

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